



6CG8

TRIODE-PENTODE CONVERTER

9-PIN MINIATURE TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage 6.3 ac or dc volts

Current 0.45 amp

Direct Interelectrode Capacitances:

| | Without External Shield | With External Shield ⁰ | |
|--|-------------------------------|---|---------------|
| Triode Unit: | | | |
| Grid to plate | 1.5 | 1.5 | μf |
| Grid to cathode & pentode grid No.3, and heater. | 2.6 | 3 | μf |
| Plate to cathode & pentode grid No.3, and heater. | 0.05 | 1 | μf |
| Pentode Unit: | | | |
| Grid No.1 to plate. . . . | 0.03 max. | 0.016 max. | μf |
| Grid No.1 to cathode & grid No.3, grid No.2, and heater. . . . | 4.8 | 5 | μf |
| Plate to cathode & grid No.3, grid No.2, and heater. . . . | 0.9 | 1.6 | μf |
| Pentode grid No.1 to triode plate. | 0.05 max. | 0.04 max. | μf |
| Pentode plate to triode plate. | 0.05 max. | 0.007 max. | μf |
| Heater to cathode | 5.5 | 5.5 [•] | μf |

Characteristics:

| | Triode Unit | Pentode Unit | |
|--|----------------|-----------------|------------------|
| Plate-Supply Voltage. | 100 | 250 | volts |
| Grid-No.2 Supply Voltage. . . . | — | 150 | volts |
| Cathode Resistor. | 100 | 200 | ohms |
| Amplification Factor. | 40 | — | |
| Plate Resistance (Approx.). . . . | 6900 | 750000 | ohms |
| Transconductance. | 5800 | 4600 | μmhos |
| Plate Current | 8.5 | 7.7 | ma |
| Grid-No.2 Current | — | 1.6 | ma |
| Grid-No.1 Voltage (Approx.) . . . | | | |
| for plate current of 10 μamp | -10 | -10 | volts |

⁰ with external shield JETEC No.315 connected to cathode except as noted.[•] with external shield JETEC No.315 connected to ground.

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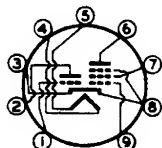
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TRIODE-PENTODE CONVERTER

Mechanical:

| | |
|--|---|
| Mounting Position. | Any |
| Maximum Overall Length. | 2-3/16" |
| Maximum Seated Length. | 1-15/16" |
| Length, Base Seat to Bulb Top (Excluding tip). | 1-9/16" \pm 3/32" |
| Maximum Diameter. | 7/8" |
| Dimensional Outline. | See General Section |
| Bulb. | T-6-1/2 |
| Base. | Small-Button Noval 9-Pin (JETEC No. E9-1) |
| Basing Designation for BOTTOM VIEW. | 9GF |

Pin 1-Triode Grid
 Pin 2-Triode Plate
 Pin 3-Cathode
 Pin 4-Heater
 Pin 5-Heater
 Pin 6-Pentode Plate



Pin 7-Pentode
 Grid No.2
 Pin 8-Pentode
 Grid No.3,
 Cathode
 Pin 9-Pentode
 Grid No.1

CONVERTER SERVICE

Maximum Ratings, Design-Center Values:

| | Triode Unit as Osc. | Pentode Unit as Mixer | |
|---|------------------------|--------------------------|-------|
| PLATE VOLTAGE. | 250 max. | 250 max. | volts |
| GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE. | - | 250 max. | volts |
| GRID-No.2 VOLTAGE. | - | See Grid-No.2 Input | |
| Rating Chart at front of Receiving Tube Section | | | |
| GRID-No.1 (CONTROL-GRID) VOLTAGE: | | | |
| Negative bias value. . . | 40 max. | 40 max. | volts |
| Positive bias value. . . | 0 max. | 0 max. | volts |
| PLATE DISSIPATION. | 1.5 max. | 2 max. | watts |
| GRID-No.2 INPUT: | | | |
| For grid-No.2 voltages up to 150 volts. | - | 0.5 max. | watt |
| For grid-No.2 voltages between 150 and 300 volts. | - | See Grid-No.2 Input | |
| Rating Chart at front of Receiving Tube Section | | | |
| GRID-No.1 INPUT. | 0.5 max. | - | watt |
| PEAK HEATER-CATHODE VOLTAGE: | | | |
| Heater negative with respect to cathode. . . | 200 max. | 200 max. | volts |
| Heater positive with respect to cathode. . . | 200 [▲] max. | 200 [▲] max. | volts |

[▲] The dc component must not exceed 100 volts.



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TRIODE-PENTODE CONVERTER

Typical Operation:

| | Triode Unit as 250-Mc Osc.* | Pentode Unit as Mixer* | |
|--|--------------------------------|---------------------------|------------|
| Plate Voltage. | 150 | 150 | volts |
| Grid-No.2 Voltage. | - | 150 | volts |
| Mixer Grid-No.1 Supply Voltage | - | -3.5 | volts |
| Oscillator Voltage (rms) at Mixer Grid No.1 | - | 2.6 | volts |
| Mixer Grid-No.1-Circuit Resistance | - | 120000 | ohms |
| Oscillator Grid Resistor . | 2700 | - | ohms |
| Conversion Trans- conductance. | - | 2100 | μ mhos |
| Plate Current. | 13 | 6.2 | ma |
| Grid-No.2 Current. | - | 1.8 | ma |
| Grid Current | 3.6 | - | ma |
| Grid-No.1 Current. | - | 2 | μ amp |
| Oscillator Power Output (Approx.) | 0.5 | - | watt |

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

| | | |
|--------------------------------------|----------|--------|
| For fixed-bias operation | 0.1 max. | megohm |
| For cathode-bias operation | 0.5 max. | megohm |

- * In TV or FM receivers, it is generally desirable to operate the oscillator with less power input than shown in the tabulated data in order to avoid over-excitation and excessive oscillator radiation.

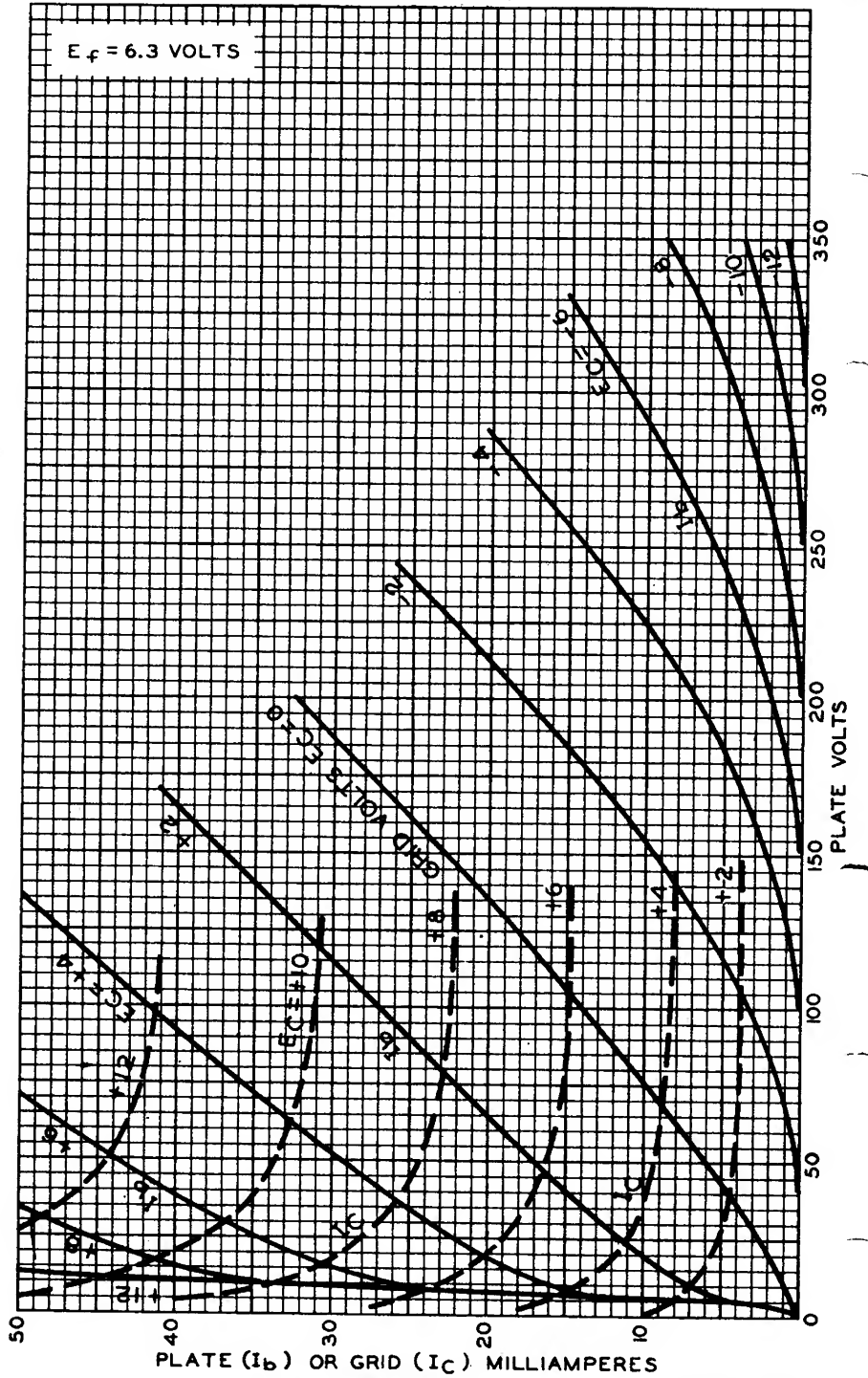
* With separate excitation and triode unit connected to ground.

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AVERAGE CHARACTERISTICS TRIODE UNIT



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92CM-7531

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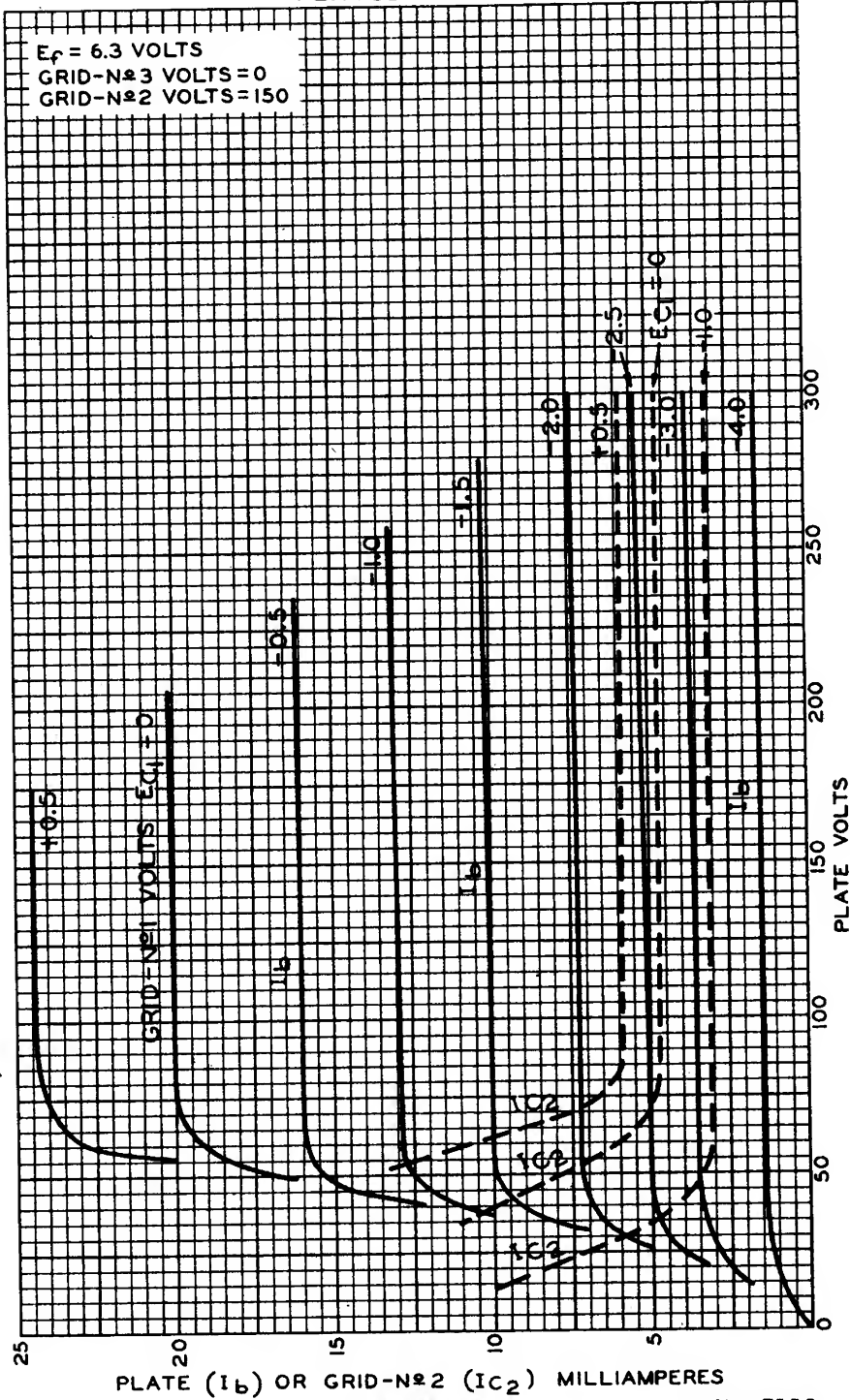


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AVERAGE CHARACTERISTICS
PENTODE UNIT



TUBE DIVISION

92CM-7532

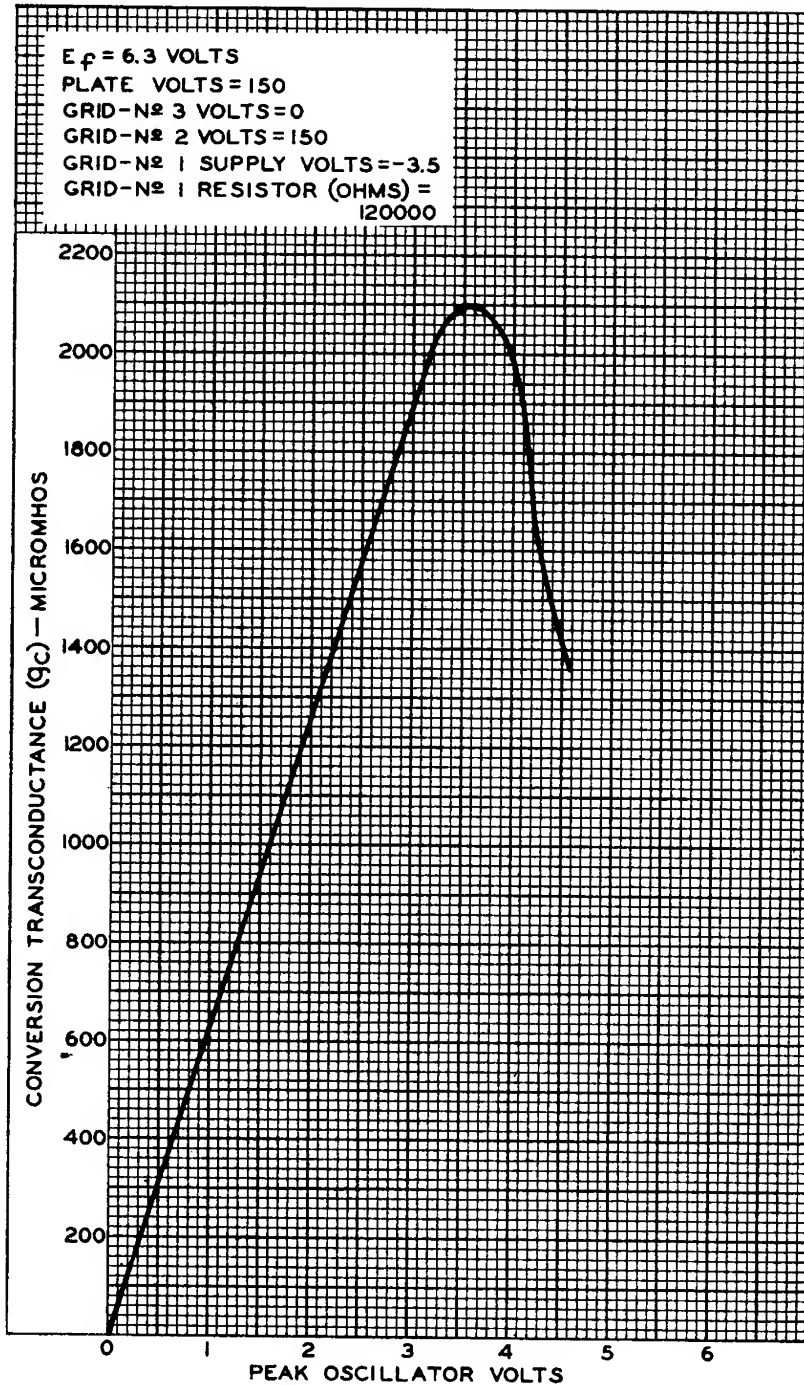
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OPERATION CHARACTERISTIC
WITH SEPARATE OSCILLATOR EXCITATION
PENTODE UNIT



TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7546R1



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*Dr. L. E.
10/64*

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OPERATION CHARACTERISTICS WITH SEPARATE OSCILLATOR EXCITATION PENTODE UNIT

$E_f = 6.3$ VOLTS
PLATE VOLTS = 150
GRID-N^o 3 VOLTS = 0
GRID-N^o 2 VOLTS = 150
GRID-N^o 1 RESISTOR (OHMS)
= 1200
OSCILLATOR VOLTS AT
GRID N^o 1 = 2.6 RMS

